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SURVEY OF AUDIO-VISUAL EDUCATION IN HAWAII--ITS STATUS AND NEEDS.

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THE PURPOSES OF THE SURVEY WERE (1) TO MAKE AN OBJECTIVE ANALYSIS OF THE AUDIOVISUAL INSTRUCTION NEEDS OF THE PUBLIC EDUCATIONAL SYSTEMS OF THE STATE OF HAWAII, AND (2) TO MAKE SPECIFIC RECOMMENDATIONS AND SUGGESTIONS FOR SHORT AND LONG RANGE IMPROVEMENTS WHERE NEEDED. TOP PRIORITY RECOMMENDATIONS ARE RECORDED, INCLUDING SUGGESTED ALLOCATIONS OF FUNDS. (MS)

SURVEY OF
AUDIO-VISUAL EDUCATIO.
IN HAWAII
ITS STATUS AND NEEDS

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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SURVEY OF AUDIO-VISUAL EDUCATION IN HAWAII
ITS STATUS AND NEEDS

by

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Submitted to

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CHAPTER I

BACKGROUND AND NATURE OF THE SURVEY OF HAWAII'S AUDIO-VISUAL INSTRUCTION NEEDS

This study was conducted at the request of the State Department of Education of Hawaii and the University of Hawaii by a survey team contracted for by the U. S. Office of Education. Members of the survey team included Dr. Harry Skelly, Chief of Audio-Visual Education and School Libraries in the California State Department of Public Instruction; Dr. Donald Scott, Director of Curriculum and Audio-Visual Services in the Neenah, Wisconsin Public Schools; and Dr. Charles F. Schuller, Director of the Audio-Visual Center and Professor of Education at Michigan State University and Chairman of the survey team.

The interest of Hawaiian educators in having such a survey stemmed from a long-standing recognition of the benefits which might accrue to the young people in Hawaiian schools from the application of instructional films, filmstrips, models, flat pictures, recordings and the other audio-visual media to the instructional process. Although funds for education in the Islands have been limited, each of the four school districts has made efforts to install an audio-visual program of sorts. Interest in a broader development of such facilities has persisted among administrators and teachers in the face of limitations which might well have discouraged them.

During the past year, new life has been given to hopes for improved audio-visual facilities. The National Defense Education Act has enabled many schools to add badly needed projection and recording equipment. And the State Legislature has earmarked $106,800 in the school budget for 1960-61 to be spent on audio-visual equipment and materials. Provision has been made for the first time for a Director of Audio-Visual Education at the State Office.

In the face of such evidences of improving prospects, the time appeared particularly opportune for a clear-cut and objective survey of the present status of audio-visual needs in the public schools and in the University of Hawaii.

Specific Purposes and Design of the Survey

The purposes of the Survey were (1) to make an objective analysis of the audio-visual instructional needs of the public educational systems of the State of Hawaii and (2) to make specific recommendations and suggestions for short and long range improvements where needed.

In planning the Survey, the writers were concerned with several basic principles of a good educational program:

1. The function of the newer communications media in education is the improvement of instruction and learning. To put it another way, audio-visual instructional materials

and methods exist to help achieve better and more efficiently those sound curricular objectives which the schools are set up by the people to achieve in any case.

2. Audio-Visual materials and methods apply to all grade levels and subject areas. They are to be thought of as integral to a sound educational program rather than as a substitute or replacement for any part of such a program. Thus, recommendations for the audio-visual program in this report are in no sense meant to imply less support for guidance, social studies, vocational education, reading, libraries -- or any other aspect of a good educational program. It is a part of them all.

3. The extensive benefits to be derived from instructional films, radio, educational television and the other newer media can be attained only by teachers who are competent in their use. Thus, a strong program of teacher education for both pre-service and in-service teachers must accompany the provision of adequate facilities, equipment and materials in the schools to assure a strong audio-visual program.

The plan for the study was as follows:

1. Confer with educators at various levels and locations to determine their feelings regarding audio-visual instruction

needs and problems in the schools and in the University of Hawaii. Those conferred with (some a number of times) included:

a. The State Superintendent of Public Instruction, his Assistant and Deputy Superintendents and their staffs in the State Office of Education;

b. District and Deputy Superintendents and Field Assistants on Kauai, Maui, Hawaii, and Oahu;

c. A meeting of school principals on Kauai;

d. A meeting of Audio-Visual Directors and Coordinators, and School Administrators at the Oahu District Office;

e. Principals, Audio-Visual Coordinators and teachers in 25 schools around the four Islands;

f. The President and Vice-Presidents of the University of Hawaii, several Deans and faculty members, and the Assistant Dean and faculty of the College of Education;

g. The Director of the Audio-Visual Center at the University of Hawaii;

h. Informal visitations with two Commissioners of Education, several State Legislators, and a number of business and professional people (other than educators) around the Islands.

2. Determination of the present status of audio-visual equipment, materials and facilities in the State Office of Education; in the four District offices; in all the public schools; and in the University of Hawaii. This information was secured by means of direct visitation by the writers, inventories supplied by administrative officers and by questionnaires sent to all public schools in the Islands excepting Oahu and Maui where recent inventories were available.

3. Evaluation standards based upon research and experience were adapted to the particular administrative and geographical conditions found in Hawaii. Studies by Hass,[1] Skelly,[2] Schwartz,[3] McCarty and Hartsell,[4] and others of county and cooperative audio-visual programs were used as a basis for the standards established for the public schools. A National Education Association Department of Audio-Visual Instruction study of audio-visual centers in colleges and universities[5] and another study by Larsen[6] were used in formulating standards appropriate to the University of Hawaii.

4. The above standards were then applied to the information gathered and recommendations were formulated regarding

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1. Note: References are indicated at the close of Chapter I

the equipment, materials and facilities needed. Other recommendations pertaining to methods of procedure, to personnel relationships, and to cooperative arrangements between the State Office of Education, the University of Hawaii, the District Offices and the schools, - are based upon the less tangible but more significant evidences of the quality of professional leadership at all levels and the exceptional interest of the people of Hawaii in their schools. With these ingredients present, there would appear to be no insuperable barrier to significant and continuing progress in the audio-visual program of the Hawaiian educational system and without sacrifice of other aspects of the educational program in the process.

New Forces Affecting Education

Educators of the new State located at the crossroads of the Pacific sensed, also, that there are great challenges facing education throughout the free world. Several of these bear particular attention.

The Explosion of Population. As the world is rapidly becoming smaller in terms of jets and rockets, it is also becoming more thickly populated by the hour. Each day, according to Newsweek Magazine of December 14, 1959, 150,000 people are being added to the total. As of 1960, the world's estimated population is 2.9 billion. By 1970, it will be 3.5 billion. And by the year 2000 , some sociologists predict that the world's population will have tripled as the second, third, and fourth waves, in turn, have children.

The obvious impact of rapid population growth on education is that more schools and teachers will be needed. California reported a year ago that 9,000 new school children were having to be accommodated each month. Their State Superintendent of Public Instruction in March of 1960 predicted a 66% enrollment increase by 1970 to a total of 5,000,000 pupils in California schools. Preliminary 1960 census reports for the State of Hawaii similarly indicate substantial population increases during the past ten years, particularly on Oahu. To some degree, all parts of the nation are, or will be, affected by the simple physical requirements of a rapidly growing population.

Less obvious, but probably of greater significance, are other aspects of the population explosion. About one-third of the world's population today is found in the so-called more advanced, industrialized nations with relatively high standards of living. In 1970, less than one-fourth of the world's population will be found in these countries because the bulk of the population increase is to be found in the Far East, Southeast Asia, and, to a lesser extent, in Africa. To strengthen our world leadership in the realm of humanitarian ideals and in the principles of democracy, the peoples of the Western world must become far more conversant than they now are with the peoples and cultures of Asia and Africa. Failute to do so will constitute an open invitation to Communist countries to take over not only idelogical but economic and political leadership.

The implications for public education at all levels are enormous. And the opportunity for the new State of Hawaii to lead the way is almost equally great. For here we already have a people that is uniquely at home in all cultures. And we have a single elementary and secondary educational system which could be made readily adaptable to change. Most important of all, perhaps, is the existence of the competent and inspired leadership at the state level which is so vitally necessary for intelligent and constructive change.

Another aspect of the population explosion which bears heavily upon educational needs in Hawaii and elsewhere is the rapidly changing nature of our technological society itself. In a report released just two months ago entitled, "Manpower: Challenge of the 60's," Labor Secretary James Mitchell points up such predictions as the following:

1. This nation can increase its gross national product from $500 billion this year to $750 billion in 1970. We have the manpower and the technological know-how to do this, -- if we can educate the manpower to automation's needs.

2. For the first time in history, the 1950's saw more white collar workers in the United States than blue collar workers.

3. This trend will increase during the 60's. Fifty percent more people will join the labor force in the 60's than joined it in the 50's. And of the increase, 40% will be professional and technical workers, 23% skilled laborers, and 23% managers, clerks and sales people.

4. Total population in the United States will increase from 108 million to 208 million. Unskilled labor will form a steadily decreasing proportion of this total. The number of farm workers will actually decrease 17%.

5. And 70% of the new labor force will be high school graduates. In the 50's, that figure was 60%. Increasingly, employers are going to demand at least high school diplomas of their new employees.

6. During the same period, college and university enrollments may be expected to increase from 50 to 100%.

The schools, therefore, are the single major answer to Secretary Mitchell's challenge of the 60's. Only they can insure the conversion of potential manpower into actual manpower. More people are going to have to be educated at least through high school than ever before. This, at a minimum, means a staggering number of new teaching positions, new buildings and equipment and new tax dollars. Difficult though this may be, it will be accomplished somehow. But even this alone is not enough.

The Explosion of Knowledge. Impressive though burgeoning enrollment problems may be, they are relatively simple to solve. It is primarily a matter of arithmetic. Much more critical and more difficult of solution are those problems having to do with the massive geometric increase now taking place in knowledge itself and in the competencies necessary to apply that knowledge in our highly complex society.

J. A. Stratton

The President of the Massachusetts Institute of Technology stated two years ago that half of all we know in the fields of science has been learned in the last 10 years. He predicted that the total fields of scientific knowledge would double in five years and continue to multiply at an ever increasing rate.

The reason, of course, lies in great scientific breakthroughs which have occurred during the past few years in such fields as atomic structure, nuclear energy, electronics, and medicine. Many of these discoveries, in turn, have been made possible by the application of technology to research techniques themselves. The "mechanical brain," for example, can solve in minutes calculations which once took months of laborious effort by traditional methods. An executive of a large pharmaceutical corporation remarked that it is becoming easier to make new discoveries in science than to find out if others have already made them.

It has always been somewhat difficult for professional people to stay abreast of new developments in their fields. But we are now faced with the near impossibility of their doing so -- at least by traditional methods. An outstanding atomic physicist is reported to have refused to render an opinion recently on a question on which he is an acknowledged expert, because he had not reviewed developments during the past two months. We are faced with the almost incredible certainty that science teachers today are already out-of-date in their knowledge when they receive their diplomas upon graduation. Such is the rate of change in scientific knowledge.

Dr. Roy Simpson, Superintendent of Public Instruction in California, illustrated a similar point rather dramatically in a recent meeting of California county superintendents. He telescoped the history of human development and knowledge from 50,000 years into 50 years. If you pretend this telescoping, he said, history would read like this:

"First, out of that 50 years, man stopped living in caves only 10 years ago. Just five years ago, someone invented picture writing. Two years ago, Christianity started. Fifteen months ago, the printing press was invented. Twenty days ago, electricity was discovered, and 18 days ago, the Wrights flew their first airplane. Almost anything which makes up the material world, from inside plumbing to missiles, was invented in the past 24 hours."

Whether in medicine or missiles, farming or physics, the story is the same. In the social sciences as we have seen earlier, the volume of knowledge to be taught has likewise expanded enormously. It all adds up to a snowballing accumulation of knowledge, much of which will be vital to the welfare of our citizens.

Quite clearly, we in education have a job of reassessment to do. Quite clearly also, the job cannot be done alone by the traditional methods and teaching techniques we have used in the past. We have no alternative but to turn to technology and automation for such assistance in the educational process as these can provide. And it is considerable.

Role of the Newer Media in Education

Research in the late 1920's and early 1930's first established that significant factual learning advantages were possible through the use of instructional films. A succession of studies since that time has demonstrated that this learning potential exists at any grade level, for virtually any subject, and that benefits derive to bright and slow pupils alike. There is some evidence that films can influence attitudes and definite evidence that skills can be taught by this means.

How a film is used by the teacher has much to do with its effectiveness in the classroom. Thus, we have significant implications for teacher education in the use of such media. At the present time, relatively few teachers in Hawaii have had professional preparation of an organized nature with any of the audio-visual media.

Further evidence exists that selected instructional films can transmit information to pupils in the field of science without a teacher being present about as well as can a teacher without the use of films. And after a period of three months, the film groups remember significantly more of the material covered. These pupils, furthermore, were able to complete the course in about 80% of the normal time.

It should be emphasized here that good teaching consists of much more than transmitting information. Motivation and guidance, the stimulation of good students and remedial work with slow pupils, the building of desirable attitudes, the conditioning of behavior, and the development of creative abilities, all require the professional skill of a competent teacher. However, sufficient time has never existed for teachers to do the kinds of jobs in these areas that need to be done. Major efforts, time and energy have been and continue to be devoted to directing the business of acquiring information -- a process which machines of one kind or another can probably do better and faster.

All in all, several hundreds of studies have been conducted on the potential, the use, or the technical design of motion pictures for teaching purposes. Their values and limitations have been clearly established. And their use continues in most school systems to be sporadic and peripheral rather than basic and integral to curriculum objectives as it should be.

A comparable body of research is beginning to emerge with respect to educational television. According to Professor Hideya Kumata of the Michigan State University Communications Research Center and who is in the process of completing his second major compilation of ETV research during the past four years, the results of about 200 studies in many subject areas and grade levels demonstrate conclusively that students can learn factual information from TV about as well as they can from traditional instruction in the classroom.

Again there is no evidence that teachers can be dispensed with. There is every evidence, however, that here is a powerful medium which can make a major contribution to the substantive side of education. ETV, like the film, has many unique advantages which no instructor, however capable, can hope to match by himself. The medical schools were among the first, accordingly, to adopt closed circuit TV as an ideal means of assuring that all in the lecture-demonstration room could see the laboratory or operative demonstrations. Never before had this been possible for more than a few.

Among the newer developments in the audio-visual field during the past three years have been the production of complete courses on film. The first of these, a course in high school physics taught by Dr. Harvey White of the University of California, was put into 174 Wisconsin high schools for research purposes during the 1957-58 school year. Among the findings was the fact that experimental groups using the films did about as well on physics achievement tests as did the control groups (not using the films) in schools with a well qualified physics teacher and adequate laboratory equipment. In other words, this series of films makes possible the factual learnings in a good physics course in schools which could not otherwise support a physics program. Similar courses are now being made available in chemistry, biology and mathematics.

The most recent development in the audio-visual area is that of the teaching machine. This is an individual tutoring device in which the student learns at his own rate of speed and in which his progress is checked each time he responds to a question presented by the machine. Should his response be in error, he is referred back to a prior point where the mistake in his thinking is corrected before he goes on to the next point. There are many types of teaching machines. Some are quite simple while others are complex and incorporate not only printed matter, but also slides and motion pictures. In all, however, the key to the effectiveness of the teaching machine lies in the programming of the materials to be used in schools. While few such programs are available at the time this is written, many may be expected to be developed during the next few years.

Industry, on the other hand, has already found important applications for teaching machines. The Hughes Aircraft Company in California found, for example, that training for the assembly of missiles was nearly twice as effective on teaching machines as before these machines were used. In addition, the teaching machines did the job five times faster and reduced errors from 12.7% to .05%.

Research on other areas of audio-visual materials has been less extensive than for the film and ETV. None the less, both research and the experience of thousands of teachers have demonstrated the unique and valuable contributions to learning of filmstrips, field trips, maps and globes, models, recordings, slides, flat pictures and the many other audio and visual media.

Expert consensus is that no one medium (including the teacher) can do the job alone that must be done in our schools. It is the right combination of media for the particular teaching job to be done that must be available at the right place and time. This means simply that all types of pertinent materials and equipment (including those yet to come) must be available in sufficient amounts if we are to have adequate schools in the years ahead. These facilities, coupled with excellent teachers and adequate supplies of text and reference materials, -- all in buildings designed or remodeled for the use of the newer media, -- are what is required for a good education for our children in the 1960's.

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4. McCarty, Henry R. and Hartsell, Horace C., "The Cooperative Approach to Audio-Visual Programs." Department of Audio-Visual Instruction, National Education Association, Washington, D. C., 1959.

5. Audio-Visual Centers in Colleges and Universities, Bulletin #4 of series -"Planning Schools for the Use of Audio-Visual Materials," Department of Audio-Visual Instruction, National Education Association, Washington, D. C., 1955.

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CHAPTER II

CRITERIA AND GUIDELINES USED AS BASES FOR EVALUATION

An evaluation of an existing audio-visual education program of a State such as Hawaii implies that there are existing criteria or guidelines that may be used as instruments of measurement. Although it may be presumptuous for the Survey staff to dictate a philosophy of audio-visual education and a plan of organization compatible with that philosophy, it is apparent that definite guidelines and standards of a foundation program are needed. The principles and criteria presented in this chapter have been selected on the basis of experience and, in part, from the most pertinent research applicable to the existing plan of organization of education and the physical attributes of the State of Hawaii. They have guided the authors of this report and may be considered as recommendations of the Survey staff.

In presenting the description of a basic program for audio-visual education that follows in this part of the report, the authors use two terms which, for the sake of clarity, should be defined at this point. The are Audio-Visual Education and Audio-Visual Services.

Audio-Visual Education -- This term refers to the carefully planned instructional use of motion pictures, slides, filmstrips, stereoscopes, study prints, radio, television, recordings, posters, maps, charts, exhibits, models, teaching machines, and field trips. It includes the knowledge and techniques necessary to utilize these audio-visual materials within the pattern of the total instructional program to achieve maximum learning on the part of the student.

Audio-Visual Services -- This term refers to the practices of audio-visual departments or centers in providing materials, equipment, and professional assistance to teachers, administrators, and field assistants in the area served. A complete audio-visual service is planned to meet the needs of the schools served by providing supervision, some equipment, and an adequate supply of audio-visual instructional materials. The supply of materials should include all types, such as 16mm films, filmstrips, study prints, and the like necessary to augment local school resources.

In selecting and formulating the standards and guidelines pertinent to the four levels or major areas of concern that came within the province of the study, the survey team adopted six basic principles to which they adhered in interpreting local conditions and needs. They were:

1. Audio-visual materials, like other instructional materials, are a phase of the curriculum and should be selected and used with curricular needs in mind.

2. The only justified objective of a program of audio-visual services is the improvement of instruction.

3. The improvement of instruction as the major objective means that the whole program must be designed to get the right materials in the right place at the right time.

4. An audio-visual department serves the needs of all functions of a school or a school system in improving instruction and should be placed in the administrative organization where it can do this most effectively. This may be in an Audio-Visual Center, an Instructional Materials Center, or elsewhere, but it properly belongs administratively in the department responsible for curriculum and instruction.

5. Since properly selected audio-visual materials are designed to make classroom communication effective, teacher competency in the use of these materials is the sine qua non of a successful program.

6. The basic function of an audio-visual department is instructional service.

The four major areas or levels of audio-visual services identified as requiring special treatment in regard to standards and guidelines because of their own peculiarities and needs were: (1) the State level (State Office of the Department of Public Instruction), (2) the District level (four District Offices, Oahu, Hawaii, Maui, and Kauai), (3) the local schools, and (4) the University of Hawaii. The remainder of this chapter will deal with each of the above separately for purposes of clarity. Separate treatment is not to be construed to mean, however, that they are seen as independent or separate entities in the educational system.

Standards of Organization for Audio-Visual Education at the State Level

1. The State of Hawaii has a Director of Audio-Visual Education assigned to the Curriculum, Instruction, and Guidance staff to supply necessary leadership and over-all guidance to the development of a state-wide program in audio-visual education. The State Department of Public Instruction (State Office) through the Director undertakes to set standards, promote pre-service and in-service education in the utilization of audio-visual materials, and encourage and assist in the extension of audio-visual services to schools not porvided with them.

2. The Director of Audio-Visual Education is a recognized leader in his field with sufficient educational qualifications and experience in curriculum development and audio-visual education administration to warrant status equal to that of other Deputies of the State Office staff. He should, therefore, carry the rank of Deputy State Superintendent.

    a. The Director has a doctorate or equivalent and has had at least four years of prior experience in administering a program of audio-visual education in a position comparable to that of a full-time director of audio-visual services at a state, county, or district level.

b. Under direction of the Assistant Superintendent for Curriculum, Instruction, and Guidance, the Director of Audio-Visual Education:

(1) Develops state-wide policies and practices for audio-visual services and supervises their implementation at the district levels.

(2) Works with educational and other public officials on the development, administration, and evaluation of audio-visual education programs.

(3) In cooperation with the district director of Audio-Visual Education, he assists in the development of teacher competency among the teaching staffs of the various schools through working with colleges and universities, organizing workshops for teachers, and working with administrators in making audio-visual equipment and facilities available.

(4) Acquires and supervises the distribution and use of audio-visual education equipment and material used by the staff of the State Office.

(5) Directs research and preparation and dissemination of appropriate manuals, bulletins, articles, and reports in the area of audio-visual education.

3. Under the supervision of the Director of Audio-Visual Education, the State Office of Education provides facilities and staff for the provision of audio-visual services to other members of the professional staff of the State Office.

a. An adequate supply of equipment and material is procured, maintained, and distributed to meet staff needs with in-service education programs throughout the State.

b. The services of a photographer and/or graphic artist are provided to assist in preparation of needed audio-visual materials for the staff and illustrations for State Department publications.

c. A full-time secretary and a clerk-typist are assigned to the Director of Audio-Visual Education to perform the work required in the provision of the necessary services of the office.

Standards of Organization for Audio-Visual Education at the District Office Level

For convenience in listing the slightly different criteria pertinent to two of the four school districts of the State of Hawaii, the districts are defined as follows:

Group 1 - District audio-visual departments serving an enrollment of 30,000 and over. (Oahu)

Group 2 - District audio-visual departments serving 5,000 to 29,999 enrollment on two or more islands. (Maui)

Group 3 - District audio-visual departments serving 5,000 to 29,999 enrollment on one island. (Hawaii and Kauai)

Basic Criteria for a Foundation Program

1. Audio-visual services are provided in every district by the office of the District Superintendent of schools.

   a. The audio-visual services are available to all public schools in the district and to such other agencies as may be determined.

   b. The audio-visual service budget for the District Office provides an adequate minimum support per student. (Group 1 Districts, $1.80 per student. Group 2 Districts, $2.50 per student and Group 3 Districts, $2.75 per student) for maintaining the district level services exclusive of salaries.

2. The District audio-visual department augments the instructional program of the schools served by stocking an adequate supply of audio-visual instructional materials and equipment.

   a. The materials stocked include the items in the minimum amounts listed below (several duplicates of each title may be necessary to meet requests):

MATERIAL FOR INSTRUCTIONAL PURPOSES

Major Items of Material	Group 1 Districts	Group 2 Districts	Group 3 Districts
16mm Motion Picture Film (titles)	1800	1350	1000
16mm Motion Picture Film (duplicates)	70 per 1000 Enrollment	70 per 1000 Enrollment	70 per 1000 Enrollment
35mm Filmstrips (titles)	2300	2000	2000
35mm Filmstrips (duplicates)	150 per 1000 Enrollment	120 per 1000 Enrollment	100 per 1000 Enrollment
2" x 2" Slide Sets	100	100	100
Microslide Sets	25	25	25
Study Print Sets (Including Art Reproductions)	500	500	250
Maps	40	40	40
Charts	100	50	85
Models	70	70	70
Tape Recordings	200	200	200
Disc Recordings	1200	1200	1200
Resource Kits	25	30 - 35	30 - 35

b. The audio-visual equipment stocked meets the needs of the staff, experimental needs, and emergency needs of the schools served. The district audio-visual service center loans equipment of special nature for which small schools have such infrequent need that purchase by the school cannot be justified. Equipment is on hand to make local production of materials possible when neccessary to supplement materials available from commercial sources. Such equipment as is necessary to maintain equipment and materials is also stocked. Following is a minimum list of equipment which should be stocked to meet the above needs:

EQUIPMENT FOR INSTRUCTIONAL PURPOSES

	Minimum Amount Stocked		
Major Item of Equipment	Group 1 Districts	Group 2 Districts	Group 3 Districts
35mm Still Cameras	2	1	1
4" x 5" Press Camera	1	1	1
16mm Motion Pic. Projs.	10	7	7
35mm 2" x 2" Slide Projs.	16	5	7
3 1/4" x 4" Slide Projs.	2	2	2
Microscopic Projectors	2	2	2
Opaque Projectors	5	3	3
Overhead Projectors	3	2	2
Microphones - All types	7	2	4
Public Address Systems including electronic Megaphones	5	2	4
Radios	3	2	1
Record and Transcription Players	15	5	6
Tape Recorders	10	5	5
Screens, Projection	10	4	7
Dry Mount Press	1	1	1
Television Receiver	1	1	1

EQUIPMENT FOR MAINTENANCE PURPOSE

Major Item of Equipment	Group 1 Districts	Group 2 Districts	Group 3 Districts
Soldering iron or gun*	1	1	1
Tool Set- hand tools as needed*	1	1	1
Tube Tester*	1	1	1
Volt-Ohm meter	1	1	1
Film Cleaner and Inspector	1	1	1
Power Driven Rewind	1	1	1
Filmstrip Cleaner	1	1	1
16mm Splicers	2	1	1

*if repair technician is employed

3. The district audio-visual department provides all schools served with booking, distribution, and maintenance services compatible with good utilization requirements.

   a. A dependable and efficient booking system is maintained.

      (1) The single item order form is used to facilitate the ease and speed with which materials are booked.

      (2) Loan periods are varied according to instructional needs. Minimum booking periods for different materials are as follows:

Material	Minimum Loan Period
1. Motion pictures	1 week
2. Filmstrips	1 week
3. Study prints (inc. art prints)	2 weeks
4. Realia	2 weeks
5. Records	2 weeks
6. Models	2 weeks
7. Maps and charts	2 weeks

Permission to renew is granted if no prior booking commitment exists.

(3) The booking card system used is one that allows for efficiency in scheduling materials for specific dates. Systems similar to Wheeldex or Kardex are recommended for handling the cards.

(4) The system for booking is made as flexible as possible (for example, as little as one week in advance of day of intended use).

b. Films are completely inspected after each booking.

c. Frequent delivery and pick-up service is provided (for example, to each school at least once a week).

d. Up-to-date catalogs of pertinent available materials are available to every teacher in the schools served (for example, card files or annual catalogs with intervening supplements).

e. A minimum of film rentals are secured to supplement district owned materials.

f. Maintenance and repair services for school owned audio-visual equipment are arranged for or provided. Limited repairs of a minor nature are provided at no charge by the audio-visual service center. Major repairs are to to be paid for by the schools. The work may be done by a service center technician or by a commercial repair agency.

g. Audio-visual equipment is loaned to meet the emergency needs of those served.

4. The district audio-visual plant is easily accessible and of sufficient size to warrant efficient operation.

a. The departmental plant is located in the same building or immediately adjacent to the one in which the other offices of the district superintendent of schools are located.

b. The overall size of the department is adequate for services offered (at least 5000 square feet for Group 1 Districts; 2500 square feet for Group 2 Districts and 3400 square feet for Group 3 Districts).

c. The department has storage space that is easily accessible; shipping, receiving and maintenance space; display space; preview and/or conference space; and office space.

5. The district audio-visual department employs sufficient qualified personnel tp provide efficient professional and non-professional services.

a. The department is directed by a certificated person competent in audio-visual education. Certification requirements for audio-visual directors are the same as that of other field assistants. In Group I Districts, a certified audio-visual librarian is also provided.

b. Sufficient non-certificated personnel are employed to perform the various tasks required for adequate audio-visual services. Sufficient non-certificated employees are available to accomplish the following tasks:

1. Booking
2. Filing
3. Ordering
4. Shipping and receiving
5. Film inspection and repair
6. Secretarial
7. Cataloging
8. Delivery
9. General clerical
10. Equipment maintenance (if service is provided at the audio-visual service center)

The minimum number of non-certificated employees to accomplish these tasks are:

District Group	Number of non-certificated personnel
1	8
2	4
3	4

6. The director or supervisor in charge of the audio-visual department has adequate time to carry out the following administrative and supervisory responsibilities relative to the audio-

visual education program in the district (at least 50 percent of the time should be used for field work and in-service education).

a. To administer the procurement, distribution, technical and production services of the department.

(1) He provides opportunities for teachers, administrators and staff to preview audio-visual materials and to recommend purchases in terms of curricular needs.

(2) He formulates policies and procedures in conjunction with the State Director of Audio-Visual Education regarding the distribution of audio-visual materials and equipment.

(3) He provides assistance in solving problems in the areas of acoustics, room darkening, wiring, material and equipment selection, and other technical problems of audio-visual education.

(4) He assists with the production of locally needed audio-visual materials that are not available from other sources.

b. To aid in the improvement of instruction by providing supervisory services.

(1) He assists teachers in the proper use of audio-visual materials in terms of curriculum objectives.

(2) He assists in arranging workshops, extension courses and other in-service education activities.

(3) He integrates the audio-visual services with the State curriculum and/or course of study.

(4) He serves on all curriculum planning committees.

Standards for Organization of Audio-Visual Education at the School Level

In addition to the resources available at the district level for distribution to and return from schools, the local schools also have need for certain basic resources and facilities. The audio-visual resources available at the local level in large part determine the impact of audio-visual media on the quality of instruction that may result from a state-wide program in audio-visual education. Instruction is a cooperative teaching-learning endeavor in which philosophy, curriculum, course of study, staff, pupils, instructional equipment, materials and community resources combine in preparing individuals for citizenship in a democracy. Provisions must be made for the necessary services, facilities, and equipment to make this possible.

Basic Criteria for a Foundation Program

1. There is a trained coordinator of audio-visual education for each elementary or secondary school. (In large departments of secondary schools, it is advisable to have departmental coordinators.)

    a. Adequate released time is given to coordinators to carry out their duties. (A minimum of two class periods per day is allocated for this purpose.)

    b. The coordinator is the contact person between the school and the district audio-visual department in ordering materials and equipment, arranging for in-service education programs with district and state audio-visual directors, and other organizational details.

    c. Teachers know the coordinator's duties and use his services.

    d. Teachers are well-trained and confident of their ability to use equipment.

    e. There are trained student operators to help teachers.

    f. There is a check-out system for equipment and materials.

    g. Catalogs are readily available for teacher use.

h. Ordering is simple and prompt attention is given to orders.

2. The school has adequate facilities for the storage and use of audio-visual education materials and equipment.

a. Adequate darkening and ventilation are possible for the use of projected materials in the classrooms.

b. Classroom equipment is functional and attractive.

c. Chalkboards and bulletin boards are neat, clean, and attractively and effectively used.

d. There are electrical outlets at each end of the classrooms for using equipment.

e. There is an easily accessible audio-visual center or storage room for audio-visual equipment and supplies. In larger schools this space should provide facilities for some local production.

f. New construction plans provide for room darkening facilities and 1 1/2 inch conduits for future developments in the use of instructional television.

3. The annual budget of the school provides for an amount equal to $3.00 per student enrolled for the acquisition of necessary audio-visual facilities, materials, and equipment.

4. The amount of audio-visual equipment available in the school is:

Equipment	Number (at least 1 per bldg.)
16mm projector	1 per 250 students
2" x 2" slide and strip-film projector	1 per 150 students
Square screens, 60" x 60" or larger	1 per every two classrooms
Tape recorders	1 per 150 students
LP record players (3 or 4 speed)	1 per every two classrooms (elementary); 3 per bldg. (jr. or sr. H.S.)
Opaque projector	2 per building
Overhead projector, 7" x 7" or larger	1 per bldg. (elementary); 1 per 10 classrooms (jr. & sr. H.S.)
Radios	2 per building
Television receivers	1 per 6 classrooms (when appropriate programs are available)

ORGANIZATION FOR AUDIO-VISUAL EDUCATION AT THE UNIVERSITY LEVEL

Criteria for an Effective University Audio-Visual Program

1. Audio-visual services are provided to all University departments and instructors desiring them. These services include:

   a. Consultation on audio-visual needs and on effective use;

   b. Projection, recording, radio and TV broadcast, and operator services;

   c. Film library for university courses;

d. Production of needed film, tape, photographic and graphics materials for instructional purposes.

2. Audio-visual instructional materials, equipment, and facilities are available in amounts needed to service the University's instructional, service, and research programs. For efficient operation and maintenance, responsibility for equipment is centered in the Director of the Audio-Visual Center. Most portable equipment is distributed from the Center for such periods of time as necessary.

a. Projection and recording equipment requirements of a sound operating program approximate those stipulated for the District Office level under Group 3, with the following exceptions:

(1). The number and types of items required will vary according to extent of use according to special or technical needs of departments (such as engineering or the sciences), and according to the availability of suitable facilities for projection. For example, more tape recorders, public address systems and overhead projectors are typically needed than in a public school situation.

(2). Because of the more limited availability of suitable university level films and other audio-visual instructional materials, production facilities in graphics, photography, and film production require expansion beyond those indicated for school districts.

(3). Radio and television studios, transmitters and relay installations are major operations appropriate to university functions and are financed initially through special appropriations or other sources.

(4). Production and broadcast facilities and commensurate space are provided beyond those normally found in a school district.

3. Personnel requirements of a soundly organized university audio-visual center in full operation include the following:

a. A director with the rank of full professor and commensurate experience and status to permit him to function on an equal basis with other department heads and directors on the faculty.

b. Assistants with faculty rank in charge of campus services, graphics, television, radio, and film production. Like the Director, these persons should hold rank in appropriate schools or colleges and have definite though limited teaching responsibilities.

c. Clerical and technical positions in accordance with the level of operation. At the outset, however, and for the present level of Center operation, this includes a minimum of:

1 clerk-stenographer-booker

1 equipment technician-driver

1 film inspector-projection supervisor plus student projectionists as required to meet faculty requests.

4. The Director of the Audio-Visual Center has major responsibility for the establishment of a strong Teacher Education program in Audio-Visual Instruction or in Instructional Materials at both the pre-service and in-service levels. Accordingly, he has a joint appointment in the College of Education, has a high professorial rank, and the educational qualifications and experience necessary for that rank, plus high competence in his special field. The functions of his position in the College of Education include the following:

a. Leadership in establishing appropriate course programs in Audio-Visual Instruction and in the broader instructional materials area - both for teachers and for persons preparing to become Audio-Visual or Instructional Materials Coordinators and Directors in schools and/or colleges.

b. He teaches a limited number of courses himself and serves as Advisor for Master's and Doctoral students (when a Doctoral program is established in the College of Education), majoring in the Audio-Visual or Instructional Materials fields.

c. He and his staff at the Center work closely with the College of Education faculty to the end of obtaining exemplary use of the newer media of communication in all Education courses. This includes the location or production of needed materials of many types and assistance in their effective use.

d. He works particularly with the faculty of the University Laboratory School for appropriate emphasis on the Materials and Methods of Audio-Visual Instruction for student teachers. He works closely with the State Director of Audio-Visual Instruction in the State Office of Education to ensure a similar emphasis during the year of internship in the Five-Year Program.

e. He works closely with the State Director of Audio-Visual Education, also, on such matters as the development of appropriate in-service education programs around the Islands; exchanges of materials between State, District, and University Center Libraries; and the development of such professional groups as the Hawaiian Audio-Visual Education Association.

f. He and his staff work closely with all departments of the University in the selection, procurement, production, and effective use of appropriate media and combinations thereof -

to the end of improving instruction in University courses. While not directly a responsibility of the College of Education, this function relates closely to the total Teacher Education program as discussed earlier in this section, and is a major objective of the University as a whole.

CHAPTER III

PRESENT STATUS OF AUDIO-VISUAL EDUCATION IN HAWAII

State Office of Education Provisions for Audio-Visual Education

The organization of the State Office of Education, as of May, 1960, provides for administration and supervision of audio-visual education in the public schools of Hawaii only to the limited extent that Deputy Superintendents and Directors of the different curriculum areas can find time for it in addition to their primary responsibilities. In light of the specialized experience and competencies required for leadership in applying the newer media to education, it would be surprising to find much happening at the State level under present conditions. Little has.

State Director Needed.

It is much to the credit of the State Office of Education, however, that its staff is keenly aware of the above deficiency. The present survey has been specifically requested by the State Superintendent of Public Instruction and was strongly supported by his entire staff. It is particularly encouraging to note that the State Legislature has made possible the establishment of a new position of State Director of Audio-Visual Education in the State Office. Such a position, staffed by a person with the extensive experience and training necessary, is the first requirement for the planning, organization, and development of an effective audio-visual program for the State of Hawaii. Both the potential and the requirement of the position of State Director are such as to call for the most outstanding person available to fill such a position. The responsibilities are spelled out in Chapter II.

Lack of Audio-Visual Services within the State Office.

One of the proposed responsibilities of a State Director of Audio-Visual Education, however, is appropriate for attention at this point. This proposal relates to the need for certain audio-visual facilities within the State Office itself so that the staff can more efficiently carry on its professional work with the districts and teachers of the State. At the present time, there is a small supply of audio-visual equipment and materials in the several divisions of the State Office. These materials are selected, cataloged, distributed and serviced separately by the staff members in the various division of the State Office.

The present inventory of instructional films and related materials in the several divisions of the State Office is as follows:

	16mm Films	Film-strips	Records	Inst. Kits
Adult Education	23	74	-	-
Vocational Education	69	63	24	-
Vocational Agriculture	34	-	-	-
Home Economics	36	211	-	8

In addition to being used by the State Office staff in carrying on its work in the field, some of the above materials are loaned to local schools for class use. In order to accommodate school needs and for lack of another source of these particular materials for the schools, professional staff members of the State Office are spending time delivering materials. While their willingness to do this is commendable, such use of professional staff time is difficult to justify. In addition, the situation is one evidence of the deficiency of materials available from the District Offices and in the schools themselves.

Information concerning the audio-visual materials now in the State Office is disseminated by division directors in various ways. Several types of lists are duplicated and distributed to the District Offices and from these offices to the local schools. In terms of efficient cataloging procedures and economy, it would seem advisable that the new State Director of Audio-Visual Education coordinate the preparation and distribution of future listings.

There are no facilities within the State Office of Education for the production of such materials as graphs, charts, and posters which could be used to advantage in in-service meetings and conferences by the State Office staff. Accordingly, these useful tools are either not used at all or must be made outside, often at the personal expense of the staff member needing them in his work. There is clearly a need for simple production facilities in the State

Office so that needed materials of this type are made readily available.

After an extensive series of conferences with division staffs and with individual staff members, the Survey team concludes that there is no lack of interest in audio-visual materials or of desire to make more adequate use of them. The problem is primarily one of a lack of sufficient funds. Suggestions for implementing the foundation program for the State Office as outlined in Chapter II follow. in the next chapter.

Audio-Visual Activities in District Offices

Personnel Directing District Programs.

The major portion of existing audio-visual activities in each of the four Districts in Hawaii is administered and supervised by a member of the District Office staff. This person, in each case, has been designated as the Audio-Visual Coordinator or Director. Only in the Oahu District, however, is the Director given specific time for direction of the program. In the other three districts, the Audio-Visual Coordinator has several other primary responsibilities, and must find such time as he can for audio-visual matters. For example, one District Audio-Visual Coordinator indicated that he can spend only about 10% of his time on the audio-visual program.

In three District Offices, it was noted that the Audio-Visual Coordinator has no clerical or technical help and must himself perform such tasks as rewinding films, cataloging and booking, and delivering materials. Without sufficient time or assistance to do more, it is not surprising, therefore, that these three Co-ordinators have been unable to move beyond the most elementary type of service program for the schools. It is to the credit of these individuals and of their District Superintendents, however, that an attempt has been made to provide such audio-visual services as possible under present circumstances.

Provisions on Oahu.

In the Oahu District, more adequate audio-visual services and facilities exist than on the other Islands. There is a full-time Director, a library of films, filmstrips, records and other materials for use in the schools and a staff to assist in the operation of the Teaching Materials Center. Also there have been commendable efforts made to establish an in-service education program for teachers in Oahu public schools.

With over 105,000 students enrolled in the Oahu schools, however, as compared with only 35,000 students divided among the other three Districts, the actual availability of needed audio-visual materials and services is little better on Oahu than elsewhere in the State. There is no delivery service to schools, relatively few duplicate prints of films or other materials and no complete catalog to provide information to each teacher on what is available. The present staff and budget of the Oahu Center are of insufficient size properly to service an enrollment of 105,000 students. The net result, therefore, is that a considerable audio-visual potential exists in the Oahu District which has yet to be realized in fact.

Financial Limitations on the Districts.

The District Offices are an integral part of the State Department of Public Instruction. Thus, funds for District audio-visual services come primarily from state appropriations for educational salaries, supplies and equipment. In some cases in the past, a portion of high school laboratory fees has been allocated for audio-visual purposes in the District. These fees were discontinued by the Department of Public Instruction when the Legislature made additional funds available for audio-visual purposes. Since the elementary schools have had no comparable sources of separate revenue, Districts have acquired more audio-visual materials for secondary than for elementary purposes. In neither case, however, have funds been available for even a minimum provision of materials and equipment.

During the 1960-61 fiscal year, a special appropriation by the Legislature of $106,800 is earmarked for audio-visual materials and equipment. This amount is to be apportioned to the several Districts primarily on the basis of enrollment plus such factors as, in the case of Maui, consideration for added transportation costs to Molokai and Lanai.

Amounts available under the special appropriation constitute a decided improvement in the financial support of audio-visual programs in the schools, but in the judgment of the writers, the amount is still far short of the funds necessary for the establishment of a foundation program in any of the Districts. Funds required for such a program have been indicated on a per student basis in the preceding chapter and will be discussed further in the following summary chapter.

District Audio-Visual Services Inadequate for School Needs.

A survey was made of the more common types of audio-visual materials and equipment available in each District. A summary of this survey is included as Appendix A of this Report. It should be noted that this summary represents materials and equipment found in the District Offices as well as that located in the schools.

Materials such as films which are kept in District Offices are distributed in several ways to schools in each District. There is no regular delivery service in any of the Districts. In some cases, school officials deliver or return materials when making their rounds. In most cases, teachers or coordinators are expected to pick up their own materials and return them before or after school hours. Such a system is hardly conducive to regular and integrated use of these materials even were sufficient amounts available. The present system is inconvenient at best and places at a particular disadvantage those schools located some distance from the District Office. The net result is to deny many students in Hawaiian schools the educational benefits to be derived from audio-visual materials available in the District Offices.

The Audio-Visual Coordinator in each district has cataloged the audio-visual materials available from the District Office. Each district has established a different cataloging system. In the districts of Maui, Kauai, and Hawaii, the catalogs are distributed to each teacher. On Oahu, a lack of sufficient funds and clerical staff has made this impossible. Instead, a general listing of all the materials in the Oahu District Teaching Materials Center has been placed in each school. Teachers in the Oahu District indicate a need for more complete listings of these materials and readier access to catalogs.

There is clearly a need for a uniform cataloging system to be set up for each of the districts. The lists of 16mm films should be annotated, thus giving the classroom teacher a description of each film. In addition, the lists of materials should be cross-indexed by subject areas, thus enabling the teacher to find pertinent materials without going through a voluminous general listing.

Production facilities are limited in the Oahu District Office and non-existent in the other three. Such facilities are needed in the District Offices for the production of locally needed materials unavailable from other sources and to enable the Audio-Visual

Coordinator to demonstrate how such teaching materials as graphs, posters, charts, photographs, and slides can be constructed in the local schools. The Audio-Visual Center in the District Office should also provide assistance to District staff members desiring such materials for use in their work with school staffs in the field.

Expansion in Physical Facilities Needed.

At present, the facilities at the District Offices for carrying on a centralized audio-visual program for the districts are limited. In Oahu, a Teaching Materials Center has been set up which provides for the storage, maintenance, booking and pick-up of films, filmstrips, records, and certain other materials. In addition, a limited amount of space is available for displaying new materials and for previewing projected materials. In no case does the space provided come up to recommended standards.

Facilities for audio-visual purposes in the other three District Offices are even more limited than in the Oahu office. In Hawaii and Maui, space provisions seem fairly adequate for the small amount of materials and equipment now on hand, but as these are increased as they must be, additional space will become essential.

In-service Education of Teachers in the Newer Media a Requisite.

At the present time, only a very limited amount of in-service teacher education in the effective use of audio-visual materials is being carried on in three of the four Districts. None of the Audio-Visual Coordinators in these Districts have the time or facilities necessary. On Oahu, the record is better and commendable efforts are being made to develop an in-service program for teachers. Because of the vastly greater number of teachers to be served, however, and the extremely limited prior experience of these teachers with audio-visual materials and techniques, the general level of competence appears little better on Oahu than elsewhere.

Principals of the schools visited on the four Islands indicated that only about 15% of their teachers had had any organized experience in how to make effective use of audio-visual materials. This points to the need for a strong in-service education program in each District. It points, also, to a need for greatly increased emphasis on this aspect of pre-service teacher education in the University of Hawaii.

District in-service programs should be planned jointly by the State Director of Audio-Visual Education and the District Audio-Visual Coordinators. These programs could be contributed to by appropriate University personnel and the College of Education, in turn, could secure valuable assistance in its audio-visual program from the State Office of Education.

Particularly at the in-service level, but also at the pre-service level, there would appear to be an excellent opportunity for close coordination between the State Office of Education and the School of

Education at the University of Hawaii. District programs of in-service education in audio-visual methods and materials can and should be supplemented by university extension courses in this field -- offered either by University staff members in the several islands or, as soon as possible, over television.

A few audio-visual courses are being offered in the field by the University of Hawaii at the present time. But there is little evidence that these courses are tied in closely with state or district in-service programs in this area. Such coordination should be a primary objective of the new State Audio-Visual Director when he is appointed, and of his counterpart in the University.

Audio-Visual Programs in Local Schools

The organization of local schools falls into four categories: elementary (k-6 or K-8), intermediate (7-8 or 7-9), high school (9-12 or 10-12), and technical (13-14). In most schools, a classroom teacher has been designated as the Audio-Visual Coordinator. In a few schools, the principal himself takes charge of the audio-visual function. In very few cases does the Coordinator have any release time from a full teaching schedule to supervise the program or to help teachers in the selection and effective use of teaching materials. Without such time, the Coordinator can serve little more than a clerical and mechanical function. Release time for Coordinators is essential to the success of an audio-visual program and is one of the most needed developments in local schools.

Financing of Local Audio-Visual Programs.

The major portion of the finances for audio-visual purposes at the local school level has come from the general fund for supplies. Prior to 1960-61, no definite amount has been appropriated specifically for audio-visual supplies and equipment. The amount spent has depended entirely upon the degree of interest and initiative of the principal and his staff in finding such funds as they could for audio-visual purposes. In many schools, local PTA's have assisted by purchasing projectors and other materials. While such assistance is commendable and has been most helpful, it should be recognized as a temporary expedient only. Like other legitimate aspects of the total educational operation, the audio-visual program requires an adequate budget from appropriated funds if it is to function successfully.

As indicated earlier, another source of funds in the past was the high school laboratory fee fund, a part of which was allocated to audio-visual purposes in the District as well as within the high schools themselves. However, when an increase in supply and equipment funds was supplied by the Legislature, the fee fund was eliminated.

The National Defense Education Act has been a very real factor in improving the equipment and materials situation in the local schools during the past year. Under Title III of the Act, new projectors, filmstrips, charts, maps, manipulative devices and laboratory equipment have been purchased which add much to the resources available for teaching science, mathematics and modern foreign language. It was the consensus of Hawaiian principals and teachers visited that the NDEA has already proved to be of substantial benefit to instruction in those subject areas. There is still a considerable deficiency of equipment and materials in the three subject areas, however, and a much greater lack in the numerous subject areas which the NDEA does not cover.

The new allocation of $106,800 made by the Legislature for audio-visual purposes during 1960-61 is an important step in the right direction, but only a step. This amount will provide an average of slightly over 76 cents per public school pupil in Hawaii during the coming year. In school systems with good audio-visual programs across the Mainland, average annual expenditures range from $2.00 to $6.00 per pupil for audio-visual purposes, salaries excluded.

Audio-Visual Equipment Shortage in the Schools.

In spite of recent improvement, however, serious deficiencies remain in the amounts both of audio-visual equipment and materials in the schools. The previously mentioned questionnaire survey of all elementary, intermediate, and secondary schools in Hawaii reveals that Hawaiian schools are substantially below the level of equipment and materials necessary for a good foundation program in audio-visual education. (See Table I.) A similar tabulation of all representative types of equipment and materials is given in Appendix A.

TABLE I

PER STUDENT RATIO, BY DISTRICTS, OF FOUR MAJOR TYPES OF AUDIO-VISUAL EQUIPMENT

Type	Recommended Ratio	Hawaii	Kauai	Maui	Oahu
16mm Sound Projectors	1/200	1/550*	1/380	1/350	1/500
Filmstrip and Slide Projectors	1/150	1/435	1/235	1/450	1/450
Record Players	1/60	1/250	1/38	1/60	1/55
Tape Recorders	1/150	1/430	1/430	1/375	1/650

*This means that in the District of Hawaii, there is one 16mm Projector to every 550 students instead of one for each 200 students as recommended.

In terms of the criteria listed in Chapter II, a need exists for additional audio-visual equipment of many kinds. Most local schools approach minimum standards in the number of record players and radios. Some schools, on the other hand, report that they have no audio-visual equipment of any kind. One school reported having no electricity and is thus limited to such equipment as a handwind record player.

One factor helping to account for the small supply of available equipment in the schools is unquestionably the lack of adequate blinds and drapes to control exterior light in classrooms. Relatively little projection equipment is needed if there are only two rooms in the school where such equipment can be used effectively. Without exception in the 25 schools visited, most classes must go to a central "audio-visual room" when a film is to be shown. This may be a cafetorium, a gymnasium or other multipurpose room of some type. Frequently, a number of classes are together at these showings. In one school on Oahu, for example, the writers observed over 300 first, second, and third graders watching an instructional film.

If the purpose of large group gatherings of the above type is simply to expose students to motion pictures for such incidental benefits as they may derive, that purpose is probably being achieved. On the other hand, if the purpose is to achieve significant curriculum objectives through educational motion pictures, this is much more likely to be achieved under the direct control of the classroom teacher in her own classroom. The most effective use of instructional films and other projected learning materials is possible only when classrooms can be darkened enough so that a large, clear picture can be projected on the screen which can be easily seen by all the students in the room.

While there is undoubtedly a place for large group film showings and educational TV viewings in the school program, there is and will continue to be a vital need for projection to regular classes - and smaller sized groups of students as well. In whatever plan of class organization is employed in a sound system of education, its basis must be the welfare of the students as defined in a well-conceived curriculum plan of which instructional materials and methods are an essential part. In the schools of Hawaii at the present time, the basis for large group or other than classroom showings of instructional films is not so much the welfare of the students or the curriculum as it is the lack of adequate facilities to do otherwise.

Audio-Visual Instructional Materials in the Schools.

The amount of audio-visual materials in local schools varies greatly from school to school within Districts as well as among the several Islands. Time did not permit these differences to be pinpointed or to analyze the reasons for them. It is possible, however, to make the following summary statements concerning the present status of materials availability in the schools:

1. All 16mm films used are secured from the District Offices, or from such agencies as the Library of Hawaii, the State Health Department, the Adult Education Division of the State Office of Education, the Agricultural Extension Service of the University of Hawaii, or finally, from those

commercial agencies that provide free sponsored films. As indicated previously, the total number of films available is far short of the amount needed. And schools on the outer Islands have the rather heavy cost of air transportation for those films secured from Honolulu - the only central point from which any films can be secured other than those in their own District Office. Also, the problem of securing appropriate films at the time needed is cited by many teachers as a primary reason for not making greater use of instructional films in their teaching.

2. In most schools, a small filmstrip library has been established. Most filmstrips, however, are borrowed from the District Offices. In one locality on Oahu, three local schools had established a cooperative filmstrip library. This plan has considerable merit where the schools are close to one another and where a mutual agreement on distribution can be worked out.

3. The supply of phonograph records in the local schools is fairly good, but many of the present records are old and the majority are in the single field of music.

4. The amount of bulletin board and chalkboard space seem to be adequate in most schools.

5. Other teaching materials, such as picture sets, slide sets, objects, speciments, models, feltboards, etc. are available in very limited amounts. The supply of maps and globes is good in a few schools, sparse in most.

6. In two technical schools visited, it appears that the teachers are making considerable use of such teaching materials as objects, models, mock-ups, charts and panels. Most of these materials have been made by the teachers themselves. The inventory of audio-visual equipment for one of the technical schools listed nine filmstrip projectors, three 16mm projectors, three overhead projectors, and three opaque projectors. This amount of equipment, appropriate for the school's needs, is far above the average for the elementary and secondary schools on the Islands.

Distribution of Materials and Equipment within the Schools.

With respect to the distribution of materials and dissemination of information concerning new equipment and materials to the teachers, either the librarian or the audio-visual coordinator typically assumes these responsibilities. In some schools, the audio-visual coordinator handles the equipment with the help of a student projectionists' club and the librarian distributes the audio-visual materials. Any of these plans can work satisfactorily so long as those involved are interested and are capable of operating above a purely clerical or mechanical level.

How the Coordinator Helps Teachers.

At the present time, teacher education in the use of the audio-visual materials and equipment consists mostly of helping the teachers learn how to run the equipment. The teacher must be certified by the coordinator to the effect that she can properly operate a projector. This type of training is very necessary, but the in-service program at the local level should go further. The coordinator should have the time and knowledge to assist teachers in learning how to make more efficient and effective use of available materials. Demonstrations should be set up whereby the beginning teacher or the one who hesitates to use the newer media in teaching has an opportunity to see how successful teachers make use of these tools.

One final note on teacher education needs to be made concerning the role played by the principal of the local school. This role is most important for, as an educational leader, it is the principal who sets the pace or tone for the educational program in his school. As the principal takes the initiative by encouraging teachers to try new methods; by constantly striving for more and better materials, equipment, and facilities; and by demonstrating in his meetings with teachers the use of the newer media, teachers will tend to gain confidence in trying out and using the new tools themselves.

The University of Hawaii Audio-Visual Education Program

The University of Hawaii prepares a large proportion of the teachers for the elementary and secondary schools of the state, estimates approximating 75% or more. Accordingly, the University has a unique responsibility and opportunity to influence the quality of teaching on the Islands. In general, school administrators and field assistants have a high opinion of teachers coming from the University's Five Year Teacher Education Program. Firsthand evidences of good teaching were plentiful in the schools visited by the writers on the Islands of Kauai, Maui, Hawaii, and Oahu.

Need for Teacher Education in Use of the Newer Media.

Unfortunately, this excellence of preparation does not extend to the use of the newer media of communications with which this report is primarily concerned. Of the 5,638 teachers employed in the public schools of the Islands, less than 800 have had a course in audio-visual instruction at the University.[1]

The proportion of teachers with formal preparation in the use of audio-visual materials is not significantly lower in Hawaii than in some states on the Mainland. But it is indicative of the size of the task ahead both for the University and for the State Office of Education if the benefits of the newer media are to be fully realized by the pupils now in Hawaiian schools.

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[1] Based on 1959-60 records through the second semester, 774 students have taken an audio-visual course at the University of Hawaii since the first course was offered in 1957-58. Some of these students are doubtless summer session enrollees from the Mainland and are not teaching in Hawaii. Doubtless, also, some Hawaiian teachers have had an audio-visual course on the Mainland. The proportion of teachers with basic competencies in the effective use of audio-visual techniques is, in any case, small.

Essential as they are, the power tools of modern communications will not in themselves guarantee a better education unless teachers are competent in their use. This means a big job ahead in in-service education. It also means extensive efforts on the part of the University to see that future teachers receive, before graduation, a more adequate preparation in audio-visual materials and methods.

The audio-visual course is only one means of developing teacher competency in the use of audio-visual materials. Of comparable importance is the experience prospective teachers receive when being taught by audio-visual means in their university courses in the academic fields as well as in professional education courses. Also, the audio-visual methods they observe and employ during student teaching are of paramount importance in developing their own skills with the newer media.

To insure such desirable experiences for prospective teachers, a strong audio-visual program in the University is necessary. For a strong audio-visual program, able leadership with firm administrative support and faculty cooperation are essential. With these, the required facilities, materials, and equipment to do the job will be forthcoming. The focus of the resulting operation is in the

University's Audio-Visual Center and an analysis of the present status logically continues here.

The University Audio-Visual Center.

A small audio-visual center is now in operation on the University campus. For an operation of this size, the facilities are good though poorly located in terms of ready access by faculty and students. The main entry is through the University Library and down a back stairway. There is an outside gate immediately adjacent to the Center at ground level which could (and should) be used for the main entry. At the present time, however, this gate is restricted (apparently by University regulations), to use only as an emergency exit.

The above item of ready access to the Audio-Visual Center is important in terms of the criteria set up in Chapter II for a University audio-visual education operation. Once established as something beyond a limited mechanical service operation, the wide range of functions which a strong Center performs inevitably brings a steady flow of faculty and students to the Center for consultation on instructional service needs, for class and laboratory work, and for production requirements. Also, the projection service aspects of the Center's operation can be efficiently and economically performed only when the entrance and exit are easily accessible and at ground level.

Limited Equipment. Projection, recording, and other pertinent audio-visual equipment is available in very limited amounts at the University of Hawaii Audio-Visual Center. The fact that there has been no significant campus-wide service pattern approved to this point is an important reason for this situation. Most of the equipment now in the Center was secured through a budget transfer from the College of Engineering in 1958-59. Direct budget allocations to the Center for the purchase of equipment have been very small.

A large proportion of audio-visual equipment now on the University campus has been purchased by individual academic departments. This is a typical practice in universities without an Audio-Visual Center, but is normally abandoned after such a Center is established. The efficiency and the relative economy of a centralized audio-visual service to all departments of the university lead naturally to a concentration of responsibility for the selection, distribution and maintenance of such equipment under the Director of the Audio-Visual Center. This step had yet to be taken at the University of Hawaii when this survey was made.

Inadequate Materials. The situation with respect to equipment is duplicated when such teaching materials as instructional films are considered. Most teaching materials such as maps, charts, slides, recordings, etc. belong in the departments in which they are specifically used. Such materials as instructional films, however, which are costly to begin with and which require special maintenance should be distributed by the Audio-Visual Center. At the present time, an undetermined number of films are located in the various departments of the University. The Audio-Visual Center has a small number, (53), which are primarily used for teacher education purposes.

There is a great need for an increase in the number of films used in teacher education work. Without a specific film count in the other academic areas of the University but with an indication of the very limited number of classrooms adapted for projection, it seems probable that an equally great need exists for university level films in the other academic areas as well.

In addition, it is of the utmost importance that arrangements be worked out with the State Office of Education for an exchange of film library materials to be used in the University Laboratory School and in teacher education activities. At the present time, no such exchange arrangements is in operation. Pending the time when a more adequate supply of films is provided in the Oahu District Library, in the University Audio-Visual Center, and in the State Office of Education, some limitation may have to be made on the extent of exchanges between these several units. For the good of all concerned, however, such exchanges should be endorsed now in principle and implemented in fact as soon as possible.

Radio and Television Development. A State University is in a unique position to provide cultural and educational services to the citizens of its state through radio and television broadcasting. A cultural FM station on the University campus is being eliminated this year because of lack of necessary appropriations. The topography of the Islands would seem to make open circuit educational television broadcasting via a micro-wave relay system a highly practical possibility. Legislation before Congress during the last two sessions would provide funds to encourage the development of an educational television network in each of the states. When such legislation is passed, the University of Hawaii, working in conjunction with the State Office of Education, could be in an excellent position to provide the needed broadcast facility. It would be difficult to over-estimate the potential of ETV for in-service teacher education on the Islands, for general adult education, and for in-school broadcasts as these are found to be appropriate.

Meantime, experimentation with closed circuit television in the College of Engineering and in the forthcoming East-West Center should be encouraged and expanded in other Colleges as well.

Both radio and television facilities should be under the general direction of the Director of the Audio-Visual Center with qualified station managers and staffs assigned the operation and technical responsibilities for the stations. At this or at some prior point of development, it might be well to consider a change in name of the Audio-Visual Center to Instructional Communications Center or some similar title. While the term "Audio-Visual" is sufficiently broad to include educational radio and television, teaching machines, and language laboratories, it is frequently interpreted in more limited context by persons outside of the audio-visual field. It is clearly necessary, of course, for the Director of an operation involving all of the above media to have the personal and professional qualifications plus the experience commensurate with the broad responsibilities involved.

In considering the future of Educational television on the Islands, it is important to recognize that in no sense does it supersede the need for teachers or for other audio-visual techniques. In a real sense, it enchances and requires both to be effective. But ETV does have a unique capacity to extend the educational potential of the University in those areas in which it can properly be applied.

Administration and Finance. The Audio-Visual Center is administered by a Director who is responsible to the Vice-President in charge of Administration and to the Provost of the University. This administrative organization is appropriate to the all-university character of the Audio-Visual Center's function in that all departments of the University should have equal access to the Audio-Visual Center's services.

Those services and facilities, however, must be adequately financed in order to exert the potential of which they are capable. To the present time, there has been no evidence of the kind of financial support which is necessary for that potential to be realized. A number of factors appear to have contributed to this situation. One of these is the level of financial support accorded to the total University program by the State Legislature. Another is the relative recency of the Center's establishment. But the great potential of such a Center in the instructional, service, and research programs of the University will remain largely unrealized until such time as adequate financing can be provided. Recommendations on this point will be made in the following chapter of this Report.

Teacher Education Relationships. As indicated earlier, the total University program in Teacher Education has an excellent reputation among school administrators in the State of Hawaii with the exception of the extent of preparation provided in the area of Audio-Visual Instruction. It is essential that the Director of the Audio-Visual Center be a member of the College of Education staff and play a significant role in teacher education developments in the media fields.

During the 1957-58 academic year, six sections of Audio-Visual courses were offered on and off-campus by the University. During the following year, eight such sections were offered. During the 1959-60 year, to the present date, only four sections have been given. While an audio-visual course is only one of the necessary means by which prospective teachers become educated to the nature and possibilities of the newer education media, it is a highly essential one. The College of Education is to be commended, therefore, for its efforts to bring in additional staff so that both the teaching and service programs can be strengthened. It is of great importance, also, that the student teaching experiences provided in the University Laboratory School include a strong emphasis upon the excellent use of audio-visual materials in instruction. At the present time, there appears to be little emphasis in this direction in the University Laboratory School.

Campus Facilities for Use of the Newer Media. As in many other universities across the nation, the vast majority of classrooms in the University of Hawaii are without provisions for exterior light control so that efficient projection of any type is possible. An outstanding exception is to be noted in the new College of Engineering building in which all classrooms have an ingenious light control louvre which provides both light control and ventilation suitable for projection purposes. It was reported to the survey team, however, that other new University buildings are being planned without light control facilities. As a matter of policy, all University classrooms should be planned henceforth with appropriate provisions for the use of the newer media of communication. To do otherwise is to risk the certainty of early obsolescence and to necessitate more expensive modifications in the years ahead. Specifications for audio-visual purposes are included in the next chapter and are further detailed in 'Appendix B.

CHAPTER IV

SUMMARY AND RECOMMENDATIONS OF THE REPORT ON AUDIO-VISUAL INSTRUCTION NEEDS IN HAWAII

"Why is it important to use instructional films and TV in our schools? What ought we to be doing about these and other audio-visual teaching methods? What is our present status? What do we need? What will it cost? How should we proceed?"

These and similar questions were in the minds of educational leaders in the State Office of Education and in the University of Hawaii when the present Survey was requested of the U. S. Office of Education. It was preceded, in January, 1960, by a preliminary feasibility study by Dr. Kenneth Norberg of Sacramento State College who recommended that the complete survey be made. The Survey team consisted of Dr. Harry Skelly, Chief of the Bureau of Audio-Visual and School Library Education in the California State Department of Education; Dr. Donald Scott, Curriculum Coordinator in the Neenah Public Schools of Neenah, Wisconsin; and Dr. Charles F. Schuller, Director of the Audio-Visual Center and Professor of Education at Michigan State University, Chairman of the group. This group conducted the Survey during the period of May 1 to 21, 1960.

The specific purposes of the Survey were (1) to make an objective analysis of the audio-visual instruction needs of the public educational systems of the State of Hawaii, and (2) to make specific recommendations and suggestions for short and long range improvements where needed.

In order to evaluate the present status of the audio-visual education programs at the State Office of Education level, the District Office level, the local school level, and at the University of Hawaii, certain basic criteria were developed by the Survey Committee. These criteria, in fact, constitute the basic recommendations of the Survey staff relative to the sound foundation program needed to supply the audio-visual education needs at these levels.

Underlying reasons for the development of strong audio-visual programs in the Hawaiian education system are given in Chapter I of this Report. The basic criteria for such a program are given in Chapter II and Chapter III describes the findings of the Survey Team with respect to these criteria.

There is clearly much that needs to be done to raise the existing level of services to the recommended level in each case. Wherever feasible, priorities are indicated and suggestions made on desirable procedures which might be used in implementing recommendations.

Principles Underlying the Recommendations Made.

It seems important to stipulate several factors relating to the Survey and its recommendations:

1. The scope of this Survey is restricted to consideration of audio-visual education programs in the Hawaiian educational system. This fact does not imply lesser importance or reduced needs for other aspects of that educational

system, but rather a recognition by Hawaiian educators of specific deficiencies needing specific attention. A good audio-visual program reinforces and benefits other aspects of a good educational system and makes it more possible for them to function effectively.

2. While certain priorities will be evident in the recommendations, it is imperative that improvements go forward cooperatively and simultaneously at all four levels of the educational system. Similarly, the materials, equipment, facilities, and in-service education aspects of a sound audio-visual program must be developed on a coordinated basis.

In-service education in Audio-Visual Instruction, for example, is very necessary, but without materials for the teacher to use, it can often result in frustration. Materials without successful use by teachers, on the other hand, are likewise of limited value. There must be acceptance, readiness, equipment, and materials development so that one element reinforces the others at each step of program development.

3. It should also be pointed out that it is unrealistic to expect to raise the levels of the programs in Audio-Visual Education in Hawaii in one or two years to compare

favorably with others that have been in operation for many years. This is a process which requires time and effort. And it also requires strong administrative and financial support.

4. Recommendations in this Report are in no case intended as criticisms of individuals, officials, or agencies within or outside of the Hawaiian system of education. Even had there been time, which there was not, for a careful analysis of the work and accomplishment of individuals up to the time of this Survey, the writers could see no useful purpose in such information for this Report. Thus, major emphasis throughout is placed on needs as seen to exist, upon what can be done about them, and upon what it will take to do the job.

Top Priorities Among the Recommendations.

1. A State Director of Audio-Visual Education. It is recommended that the program in audio-visual education at the State level be brought up to standards in terms of the criteria listed in Chapter II. The type of program envisioned by the educational leaders in Hawaii requires strong and forward-looking leadership at the State level with sufficient status to put a program into action as rapidly as possible. As a first step, unquestionably, a State Director of Audio-Visual Education should be employed, with top professional qualifications and experience. He

should be given the rank of Deputy Superintendent within the Department of Curriculum, Instruction and Guidance, and located, with his staff, in the State Office of Education. Much of the leadership, the planning, the establishment of priorities and the development of forward looking policies will be in the hands of this individual. He should be appointed as soon as possible.

2. Establishment of District Centers. Strong audio-visual center operations should be established in each of the Districts similar in nature to that now in operation in the Oahu District. A full-time, highly qualified professional Director is essential to the success of these District operations, with sufficient clerical and maintenance staff to carry out their functions. Steps should be taken as soon as possible to build up film libraries and equipment stocks so that adequate service to schools can be provided independently on each Island. The amounts of materials and equipment necessary for a foundation program in each of the four Districts is indicated in Chapter II. In all Districts, a delivery service to schools should be provided as soon as possible. In the meantime, mail service should be instituted to eliminate the necessity for the pick-up of materials by teachers and by school officials.

3. Improve Light Control Facilities in Classrooms. In local systems, top priority should be given to the provision of exterior light control facilities in classrooms. A program of installation of light control

facilities in at least 20% of the classrooms per year should be begun immediately. Along with light control provisions, adequate ventilation and electrical outlets should be provided in classrooms. If difficulty is experienced in financing such operations through the currently responsible County authorities, such other means of financing as necessary for this essential development should be undertaken. A possibility here is the minor remodeling provision under Title III of the National Defense Education Act.

4. Strengthen Teacher Education in the Newer Media. Top priority at the University of Hawaii should be the establishment of a position comparable in requirements to those of the State Director of Audio-Visual Education in the State Office. Steps should be taken immediately to strengthen the pre-service education program of teachers in the College of Education with respect to use of the newer media of communications in instruction. An early step in this direction should probably be the requirement of appropriate audio-visual course experience for all undergraduate Education majors; a second necessary step is the provision of facilities in the University Laboratory School so that audio-visual materials may be used effectively in student teaching; a third step is workshop or similar experience for University Laboratory School teachers and for teachers under whom interns in the Five Year Program are working so that student teaching and intern experience will henceforth include an

emphasis on the effective use of audio-visual materials in instruction.

In-service education in the use of the newer media is a primary need for a large proportion of the teachers in Hawaii. One suggestion for early and rapid implementation of such an in-service program is the use of television. An experimental course in audio-visual education now exists on kinescopes at the University of Wisconsin. This course could be used to real advantage if arrangements could be made for broadcast over existing television stations.

5. Increase Financial Support for Audio-Visual Education. Equipment and materials costs of the recommended foundation program will total substantially more than is currently being spent in Hawaii on the audio-visual program at any level. Measured in terms of the educational output which they can make possible, however, such expenditures represent a sound inventment in Hawaii's future. It is worth noting, also, that the proposed expenditures are not unusual in effective audio-visual programs on the Mainland. They are equalled or exceeded in many school systems across the nation.

For the State Office of Education, it is proposed that a sum of $15,000 be allocated during the first year of operation for State Office audio-visual equipment and materials; $10,000 the second year; and $8,500 per year thereafter.

For the four District Office Audio-Visual Centers, the following amounts are recommended, based on 1959-60 District enrollments:

District	Per Pupil	Enrollment	Allocation
Oahu	$ 1.80	105,380	$ 189,684
Hawaii	2.50	17,349	43,372
Maui	2.75	10,905	29,989
Kauai	3.00	6,884	20,652
		Total	$ 283,697

The above amounts should be expended primarily for the establishment and enlargement of instructional film libraries in each District Office plus such equipment and supplies as needed to carry on operations described in Chapter II of this Report. It will also be necessary for District Centers to loan basic equipment to local schools with enrollments below 300 pupils. There are 13 out of 101 regular schools on Oahu which fall below 300 pupils in enrollment; 8 out of 16 schools on Kauai; 14 of 30 schools on Maui and Molokai; and 26 of 50 schools on Hawaii. It is for this reason, plus the need for essentially the same basic film library and other materials in each of the Districts (though not the same number of prints), that per pupil costs on Kauai, Mauai, and Hawaii must be substantially higher than on Oahu.

Local schools should receive through the District Offices an annual amount of $3.00 per pupil for the purchase of audio-visual equipment and materials, exclusive of films, to be kept in the schools.

For schools in the four Districts in terms of 1959-60 enrollments, these amounts would be:

District	Pupils	Amount
Oahu	105,380	$ 316,140
Maui	10,905	32,715
Hawaii	17,349	51,047
Kauai	6,884	20,652
	Total	$ 420,454

In view of the Survey findings that major projection and recording equipment will have to be trebled or quadrupled to reach foundation standards in most schools and that the situation is similar with respect to such audio-visual teaching materials as filmstrips, recordings, picture sets, slide sets, models, maps and globes, - it is estimated that from three to five years (depending upon present status in individual schools), will be required at the $3.00 per pupil level of support, to approach foundation program standards in local schools.

In light of the previously stated necessity for coordinated program development, however, with teacher education, improvement of classroom facilities, equipment, and materials all having to be developed simultaneously, the surveyors regard the three to five year time schedule as being realistic and attainable. It should be noted that the above statement means three to five years from the time that financial and staff support at the levels recommended, are begun. And it assumes that once begun, the recommended level of financial and staff support will be maintained.

6. Develop Plans for Statewide ETV Network. It is recommended that the State Office of Education and the University of Hawaii explore the possibility of a statewide instructional television network. Such a development might well be under the policy direction of a joint committee which represents the State Department of Education and the University. This recommendation does not preclude the possibility that arrangements might be made to utilize the services of commercial stations in initiating a program of in-service education for teachers prior to the time when an educational channel and the neccessary studio and transmission facilities might be obtained.

The cost of initiating an educational television operation for the State of Hawaii can only be estimated pending an engineering survey which would provide specifications and requirements for a broadcast and relay system which would effectively serve all schools on the Islands. It is recommended that such a survey be initiated at an early date.

For purposes of initial planning, however, it is estimated that an effective television installation could be made to cover the four major Islands for from $600,000 to $1,000,000. Depending upon the number of hours on the air, the amount of "live" broadcasts and consequent staff requirements, the annual budget for such a station would probably range between $200,000 and $300,000.

As previously indicated, Congress has had before it during the past two sessions bills to provide each state with a sum of $750,000 to $1,000,000 to institute a state-wide educational TV network. Legislation of this nature seems likely to pass within the next year or two. States which are ready with specific and practical plans will be in a position to benefit promptly. It is therefore recommended that the appropriate authorities in the University of Hawaii and/or the State Office of Education proceed with application to the Federal Communications Commission for a VHF channel for educational purposes.

Additional Recommendations and Suggestions for Implementation.

Supplemental to the above priority recommendations, are a number of specific recommendations for strengthening the audio-visual program in the Hawaiian educational system. These are presented under the headings of the four levels of organization previously utilized in this Report. The recommendations at this point are briefly stated for summary purposes. Those readers interested in more detailed discussion and explanation are directed to pertinent sections of Chapters II and III of the Report.

In general, the basic criteria for a sound foundation program in Audio-Visual Education as outlined in Chapter II are recommended for implementation at each level of educational organization. Certain suggestions for implementation of recommendations are made where it is felt by the surveyors that these may be helpful. It is emphasized, however, that these are guides rather than blueprints and that they should not restrict the pattern of action to be undertaken by the State Director of Audio-Visual Education or his counterpart at the University of Hawaii when these staff members undertake actual development of their respective parts of the total program.

1. State Office of Education.

   a. As soon as possible, the State Director of Audio-Visual Education should be provided with a staff consisting of a stenographer and clerk and a graphic artist to assist him in initiating recommended services to the State Office and in the performance of his other functions.

   b. The State Audio-Visual Director and his staff should be housed in the State Office Building along with other divisions of the State Department of Education.

   c. Organize audio-visual materials now available in the various departments of the State Office into a central library, catalog them and make lists available to the State Office staff. Lists of pertinent materials should also be made available to District Centers and, through them, to local schools for occasional and specialized use. It is not recommended that a state-wide audio-visual library service be established in the State Office though it can serve this function for a few specialized materials which are unsuited to District library purchase by reason of high cost, technical or specialized character, or infrequancy of probable use in schools.

d. Secure appropriate additional audio-visual materials for the various State Office of Education Departments to use in their in-service work with the schools.

e. Set up a small Graphic Interpretation section in the State Audio-Visual Office to provide graphic arts services to the State Office staff.

f. The State Director of Audio-Visual Education should play a leading role in working out cooperative arrangements with the University of Hawaii on those priority recommendations having to do with teacher education in the use of the newer media of communications and with the establishment of an educational television network.

g. The State Director should also have a primary responsibility with respect to recommending appropriate specifications for audio-visual instruction in new school buildings and for the remodeling of existing classroom facilities for audio-visual purposes.

h. It should also be a function of the State Director of Audio-Visual Education to plan appropriate information programs on the newer media of communication and their significance for education.

2. District Office Audio-Visual Program.

a. District Audio-Visual Directors should have the status, at least, of Field Assistants and the time necessary to develop effective audio-visual programs in the Districts. As soon as possible this should become a full-time position in all Districts. The difference in requirements between large and smaller districts is primarily one of staff, equipment, and materials differences rather than one of time required of the Director.

b. Provide each of the District Audio-Visual Directors on the outer Islands with a staff consisting initially of a clerk and a combination maintenance and shipping man.

c. Set up a weekly delivery service to each of the schools within each District. Probably this will call for a delivery truck service and driver on each of the main Islands plus air mail service from Maui to schools on Molokai.

d. Provide for the development of a basic equipment pool for schools in the District with enrollments below 300 pupils until such time as these schools can secure their own equipment. In the interim, a portion of the $3.00 per pupil allocation to schools might be retained by the District for rental purposes.

e. Conduct appropriate in-service education activities in audio-visual instruction methods for District schools.

f. Provide directions and assistance in the local production of audio-visual materials not available from other sources.

g. Assist local schools in planning for adequate classroom facilities for the use of audio-visual materials in terms of State standards.

h. Provide for minor maintenance and repair service for audio-visual equipment in the local schools.

3. Audio-Visual Programs Within Individual Schools.

a. Appoint an Audio-Visual Coordinator and provide him with sufficient time to work with teachers in the proper selection and use of audio-visual materials. The amount of released time will depend upon the size of the school.

A minimum of two class periods per day should be provided for Coordinators in schools of 300-500 enrollment. A school of 1000 students or more should have a full-time Audio-Visual Coordinator. These positions might be provided as "overhead" positions.

b. Provide an annual budget of $3.00 per pupil to local schools within the District for audio-visual purposes. Arrangements will have to be made with small schools of under 300 enrollment for the loan both of equipment and of certain materials from their District Offices until such time as these schools can acquire their own.

c. Plan for a local school storage center preferably within or adjacent to the School Library, where audio-visual materials and equipment may be maintained and distributed.

d. Develop a work area in which teachers and students may prepare charts, posters, and other simple audio-visual teaching materials for use in instruction.

e. Develop local in-service educational opportunities on the selection and effective use of materials, on production of simple visual and recorded teaching materials, and on the possibilities and operation of various types of projection and recording equipment.

f. Improve classroom facilities for the use of projected materials as indicated in the priority recommendations.

4. Audio-Visual Developments in the University of Hawaii.

a. As indicated under the priority recommendations section above, an extension of teacher education in effective use of the newer media is seen as a primary need for the University. Various factors enter into the development of an effective teacher education program in Audio-Visual Instruction. These are outlined in Chapter II and further discussed in the section of Chapter III on the present status of the University's audio-visual program. The criteria and proposals in these sections are recommended for implementation.

b. It is recommended that the Audio-Visual Center operation now in existence be expanded and strengthened to include a strong film library for university purposes plus the addition, as soon as feasible, of production staff and facilities in Graphic Interpretation, Film Production, Radio, and Television.

c. Improved access should be provided to the Audio-Visual Center for faculty and students and for campus distribution services.

d. A budget should be established for the Audio-Visual Center commensurate with its functions. Initially, this budget might include (1) funds in amounts previously allocated to University departments and agencies for the purchase of audio-visual equipment and materials; (2) an amount equivalent to $7.00 per student in the total University enrollment for build-up of the University Film Library and additional equipment needs; and (3) funds as needed for staff, clerical, and student labor salaries.

e. Steps should be taken at once to incorporate appropriate facilities for the use of the newer media of communications in all future construction on the University campus. (See Appendix B). A program of adding light control facilities to present classrooms should be instituted so that within five years, a majority of all University classrooms will be so equipped.

f. An exchange of materials arrangement should be worked out as soon as possible with the State Director of Audio-Visual Education and the Oahu District Office. This step is particularly important for teacher education purposes and, in time, will be mutually helpful to the State in-service education programs and to the University.

APPENDIX A

AUDIO-VISUAL EQUIPMENT AND MATERIALS AVAILABLE WITHIN HAWAIIAN SCHOOL DISTRICTS (MAY, 1960)

	DISTRICTS AND ENROLLMENTS				
Type	Hawaii 17,349	Kauai 6,884	Maui 10,905	Oahu 105,380	Total 140,518
16mm Projector	32	18	32	218	300
Filmstrip and 2" x 2" Slide Projector	40	29	24	232	325
3 1/4" x 4" Slide Projector	2	3	1	0	6
Opaque Projector	8	3	7	29	47
Microprojector	8	4	3	42	57
Overhead Projector	0	-*	0	15	15
Record Players	69	111	185	1,924	2,289
Tape Recorders	39	16	29	160	244
Radios	42	-	88	700	830
TV Receivers	0	0	0	4	4
16mm Films	193	0	250	2,300	2,743
Filmstrips	1,342	1,014	876	2,400	5,632
Picture Sets	-	-	-	200	200
Slide Sets	-	-	5	-	5
Objects, Specimens & Models	-	-	-	150	150
Felt Boards	46	-	-	-	46

* Item not reported

SUMMARY OF RECOMMENDATIONS FOR AUDIO-VISUAL PROVISIONS IN UNIVERSITY CLASSROOMS AND LABORATORIES

(See following section for discussion of each point)

I. Light Control

- A. Choice of opaque plastic draperies on heavy duty traverse track; full closure Venetial blinds; or full closure opaque jalousies in all classrooms and other projection areas.
- B. Dimmer light controls on overhead lighting.

II. Ventilation

- A. Adequate to provide minimum of 10 cubic feet air change per student per minute.

III. Electrical Installations

- A. Switches and outlets
  1. Room light switches at front doorway and also at point of projection.
  2. Two standard 110 volt AC outlets front and rear walls and one on inside wall. Two circuits per room.
  3. Outlets on separate circuits from overhead lights.
  4. Sufficient circuits to permit simultaneous use of projection equipment in any number of adjacent rooms. Circuits fused to 15 amperes with circuit breakers rather than fuses.
  5. Outlets above each bulletin board or peg board in classrooms and corridors and in display cases.
- B. Conduits
  1. 1" conduit with speaker cable and outlets permanently installed from front to rear of each classroom.
  2. 1 1/2 to 2" conduit to front of each classroom for central sound system wiring and coaxial cable for closed circuit TV.
  3. 1" conduit to front of each classroom from base of television antenna and wired to jacks in classrooms and auditorium.

IV. Acoustics

- A. Acoustic tiling on ceiling and back walls down to dado height.
- B. Wall and floor and ceiling construction which prevent sound transmission from or to adjacent instructional areas.
- C. Avoidance of air ducts leading from room to room.

V. Miscellaneous

- A. Chalkboards and Bulletin Boards
  1. Pastel green steel chalkboards across front of each classroom. Display rails mounted above.
  2. Bulletin board on side, front, or interchangeable with section of chalkboard.
  3. Bulletin boards lighted by shielded flourescents in all corridors as appropriate. One 4' x 8' section of pegboard recommended for each classroom.
- B. Exhibit Cases
  1. Recessed 3-D exhibit cases at appropriate points in all corridors and in some classrooms. Sliding plate glass, lockable windows.
  2. Interior walls suitable for mounting of materials and frequent repainting to fit exhibit requirements.
  3. Adjustable glass shelving, lighting, and electrical outlets.
  4. Cover arrangements when not in use.
- C. Miscellaneous
  1. 18" x 40" x 24" storage cabinet with lock, in each classroom for projectors, etc.
  2. Door sills flush with floors at all room entrances.

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Discussion relating to the above recommendations will be found on the following pages. For detailed information see also:

Planning Schools for the Use of Audio-Visual Materials, Bulletin No. 1, "Classrooms," by Cypher, Irene F., Cross, Foy, (Editors), Department of Audio-Visual Instruction of the National Education Association, Washington, D. C., Rev. edition, 1958 ($1.00).

Planning Schools for the Use of Audio-Visual Materials, Bulletin No. 2, "Auditoriums," Cypher, Irene F., Cross, Foy, (Editors), Department of Audio-Visual Instruction of the National Education Association, Washington, D. C., 1953 ($1.00)

Planning Schools for the Use of Audio-Visual Materials, Bulletin No. 4, "Audio-Visual Centers in Colleges and Universities," Department of Audio-Visual Instruction of the National Education Association, Washington, D. C. 1955, ($1.50)

The School Administrator and His Audio-Visual Program, edited by Charles F. Schuller, 1954 Yearbook of the Department of Audio-Visual Instruction of the National Education Association, Washington, D. C.

"Thermal Environment," (portfolio of articles on light control, ventilation and airconditioning) Nations Schools, May, 1959, pp. 85-141.

Morehouse, Francis, et. al., "Year Around Climate Control," School Executive, March, 1959, pp. 47-58.

Recommended Audio-Visual Provisions for Classrooms.

I. Light Control

A. Standards - To assure optimum projection of all projected materials, incident light in a classroom should not exceed 1/10 footcandle. This is a level of illumination under which it is possible to do some note-taking, if desired. It is a level necessary for good color projection, for the use of such important devices as the opaque projector, for the comfortable viewing of pictures over a period as long as a class hour, and for good tonal quality in projected pictures. It is the standard recommended in 1953 by The Committee on Non-Theatrical Equipment of the Society of Motion Picture and Television Engineers and by the Department of Audio-Visual Instruction of the National Education Association.

It is particularly necessary to make sure that no narrow beams of light, especially sunlight, enter the room to produce bright spots near or on the screen. This is a matter, largely, of properly installed draperies or other light control fixtures, and of planning for the shielding of light from doorways leading from lighted areas.

B. Drapery Installation - One recommended and satisfactory method for controlling light from outside windows is by means of opaque plastic pull drapes mounted on tracks. Plastic drapes are fire-resistant, easily cleaned, relatively inexpensive, and attractive in appearance; they may be procured in a variety of decorator colors and patterns.

In original construction the following provisions should be made for drapery installation:

1. A recessed slot in the ceiling parallel to and either flush with or 12" to 18" back from the windows; the slot should be 12" in width and from 6" to 8" in depth.
2. Heavy duty drapery traverse track and cords installed in the top of the slot, (or provisions made therefor in supports and materials to which track can be easily attached); a 12" provision should be made for overlap.

Drapes should hang at least 18" below window openings or to a point from 12" to 18" above the floor unless window areas extend from ceiling to floor in which case full length draperies are required. Overlapping tracks rather than single track are recommended to provide the necessary 12" overlap. This is particularly important where windows may be opened to supplement ventilation.

C. Full closure Venetian blinds or opaque exterior louvres are highly recommended outside light control devices. Blinds of the full closure type are essential if blinds are to be used since ordinary Venetial blinds do not exclude sufficient light for good projection.

Opaque louvres are probably the most satisfactory method of exterior light control for educational buildings in warm climates since they permit a practical combination of light and ventilation control. Normally, however, louvres are best installed during new building construction. (See new University of Hawaii College of Engineering building.)

D. Controlled Lighting - Second in importance only to provisions for necessary minimum lighting are provisions for adjustable general low-level room illumination. Adjustability from 1/10 to one foot candle of general illumination is recommended to enable the instructor to increase the light level with certain types of projection such as line-drawing slides and overhead transparencies used in lecture situations where more extensive note-taking is desirable.

This low-level lighting can be provided by one or two lighting fixtures recessed in the ceiling away from the screen area and installed so that light is directed downward. Rheostat or dimmer control is recommended to vary the intensity of these lights; a satisfactory alternative is to have bulbs of varying wattage in the fixtures controlled by separate switches. A second and ideal alternative is to have all electric illumination under rheostat control. This would require all fixtures to be recessed and separate controls for the front and rear banks of lights so as to avoid direct light on the screen.

II. Ventilation

An adequate ventilation system is essential to the effective use of projected instructional materials. Classroom ventilation should be planned to accommodate a maximum student load when used for projection purposes over prolonged periods such as successive hours during the day. Special ventilation provisions for audio-visual purposes are unnecessary excepting where the system is dependent upon supplementary air flow from open windows and doors, - i.e., when the system is inadequate for full classroom use at any other time. Recommended standards call for a minimum air change of 10 cubic feet per student per minute.

Air conditioning is becoming economically practical in new types of building construction and should also be investigated when planning new buildings. (See thermal references on page 91.)

III. Electrical Installations

A. Switches and Outlets - In addition to switches placed near doorways (front) for the control of overhead lighting, an additional room light switch should be located on the wall near the point of projection. This switch is essential for immediate and easy control of room lights by the projectionist. Rheostat or dimmer controls should likewise be located at this point.

An adequate number of electrical outlets should be located on the back, front, and side walls of each classroom, with at least one outlet in each position. One outlet should be at the location for projection from the rear of the room. Outlets at the front are required for such equipment as opaque and overhead projectors, record players and tape recorders. Outlets at the sides will be needed for group work of various kinds.

All outlets should deliver 110 volt AC current, and be wired and fused for no less than 15 amperes. Lines to outlets should be separate from overhead light circuits. There should be a sufficient number of circuits to allow simultaneous use of equipment in any number of adjacent classrooms without overloading the circuits. This is emphasized as being of fundamental importance. Circuit breakers rather than fuse boxes should, of course, be used.

Standard 110 volt AC outlets should likewise be installed above bulletin board locations in classrooms and in corridors; also in display cases as described in Section V.

B. Conduits - A 1" conduit with speaker cable should be permanently installed from the front to the rear of each classroom in new buildings. A speaker line outlet should be installed at the projection location and a companion outlet at the front of the room. This outlet may, in turn, connect with the permanent speaker of a central sound system, if one is installed, or may serve the portable speaker of a 16mm projector.

Permanent speaker installations are not recommended at this time because of continuing technical improvements unless the installation is designed to be readily replaceable.

A second permanent conduit of 1 1/2 to 2" inside diameter is recommended for central sound wiring and for coaxial cable for closed circuit television installation.

The conduit should have an outlet at the front of each classroom and on the stage of the auditorium as well.

In view of the educational potential of television, provision should be made at the outset for fully adequate television antennas wired to antenna jacks to the front of each classroom and to the auditorium. A 1" conduit from the base of the antenna to the above locations is recommended. This conduit should carry the antenna, ground wire, and booster circuit, and be so installed that a standard receptacle can be plugged into it at each outlet.

Final location of the antenna and the type of installation is a technical matter on which the recommendations of TV specialists should be secured. A detailed discussion of antenna systems for AM and FM radio and for television is given in The Architects Manual of Engineered Sound Systems 19: pp. 123-136.

IV. Acoustics

The acoustic properties of a classroom are quite as important for audio-visual purposes as are adequate light control and ventilation. In general, reverberation time for an average classroom should be kept within the limits of 0.6 to 1.2 seconds and should apply on high as well as low frequencies. Less is too "dead" and more creates troublesome echoes.

While each room may differ in its acoustical problems, the great majority of classrooms will have good sound properties if the ceiling and the back wall (down to dado height) or the equivalent of that area are covered with acoustical tile or its equivalent. If less absorbent materials are used, a proportionately larger area must be covered.

Adequate provision must be made in wall and floor construction for sound insulation between rooms and floors. If a nonflexible type of partition is used, nonporous and rigid construction of partitions as well as floor slabs provides the simplest solution to sound insulation problems. In addition, proper wall materials, floor insulation and covering (asphalt tile or similar) and the avoidance of hot or cold air ducts leading from room to room, will do much to create suitable acoustical conditions in the building as a whole as well as in individual classrooms.

V. Miscellaneous

A. Chalkboards and Bulletin Boards - Classrooms should be supplied with adequate vertical display and working spaces. Chalkboards across the front of the room will normally be sufficient for college classes. These boards should be light in color (such as pastel green or yellow) rather than black and must be of high quality to avoid unnecessary maintenance.

Each room should also have at least one display board (bulletin board) which is about 4' x 5 1/2' in dimensions and light in color. Its location should be forward on the side or on the front wall of the classroom. The amount of display board (including pegboard) and chalkboard surface provided is directly dependent upon the instructional use to which each room is to be put and should be planned, where possible, according to specific needs. Since classrooms will be used for a variety of classes in some cases, a flexible arrangement of counterbalanced chalkboards and bulletin boards is suggested. A practical though expensive arrangement is the sliding or lift type panel in which chalkboard and bulletin board are interchangeable as needed.

Bulletin boards with attached light fixtures should likewise be located in the corridors. Lighting by shielded flourescent units is inexpensive and highly recommended irrespective of general illumination. This necessitates advance planning for locations of necessary electrical outlets in corridors.

B. Display Cases - Display cases for three-dimensional exhibits should be incorporated in the corridors and in a few classrooms, particularly those classrooms where teaching methods will be taught. Each display case should be recessed flush with the wall, have concealed flourescent lighting and electrical outlets for special lighting and animation effects when needed. Wallboard rather than plaster surfacing for the sides and back of the space should be used to facilitate frequent painting or the fastening of desired background materials. Adjustable and removable glass shelving is recommended. Sliding glass windows which can be locked should be provided and sliding or recessable panels to cover the space when not in use.

C. Storage Space - The over-all amount and types of storage space desirable for classrooms is probably a matter best left to teachers to decide. For audio-visual purposes, however, it would be highly desirable to have a cabinet 18" deep, 40" long and 24" high for equipment temporarily or permanently assigned to a room.

It is recommended that a central storage room for audio-visual equipment be located on each floor of the building. This space need not be larger than 40 to 60 square feet in area, requires no windows, and can be located anywhere on the floor. It should have a bench and one double outlet for projector testing.

D. Door Sills - Door sills should be designed so that equipment carried on wheeled carts can be rolled easily through doors to all rooms.